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W. ROBERT MOORE

IN THEIR ETERNAL WHITE, KOREAN WOMEN GO ABOUT THEIR HOUSEHOLD TASKS

Originally the color for mourning, white is still worn by many women and some men of the "hermit kingdom" (Bulletin No. 1). It became everyday dress because old custom demanded a three-year mourning period for deceased members of one's family or of the royal family. Death came often enough to make the sorrowing costumes almost perpetual. The tradition adds greatly to the Korean woman's work, for she must launder the voluminous garments almost daily.

Bulletin No. 1, October 2, 1950

War Engulfs Korea's "Land of Morning Calm"

AMERICA'S fighting men in Korea, though operating in the same latitude as Cape Hatteras, North Carolina, or San Francisco, California, are finding that nearly all resemblance to their homeland ends there.

While the doughboy grumbles about his foxhole "bunk," he learns with surprise that many Koreans sleep on wooden pillows. Also strange to him is the national habit of wearing white for mourning (illustration, cover). And men doing their hair in topknots. Jeep drivers are occasionally startled by a Korean crossing in front of their speeding vehicles to kill the evil spirits he thinks are following him. Belief in spirits is widespread.

It Never Rains but It Pours

The men of the armed forces, however, soon learn that in the "Land of Morning Calm" such differences are only skin deep and that the Korean is a person of intelligence, humor, and dignity. He represents a Far Eastern culture that was old at the time of the Romans. He regards education so highly that he calls his neighbors by the title of "schoolman", though they may never have had the opportunity of finishing one grade.

Korea's weather and terrain are different from what Americans are used to. Though total annual rainfall is about the same as on the United States eastern seaboard, it is not evenly distributed over the year. Rain falls in great summer bursts, causing floods between dry spells. The period of the winter monsoon is almost continuously dry.

Mountain ranges as high as the Appalachians cover virtually all the country. Granite hills up to 6,300 feet crease the terrain of Indiana-sized South Korea. They form a twisting network of valleys which communist North Korean forces followed on their southward surge of invasion and which also serve UN forces on the road back. Rail and highway routes twist fantastically.

Korea Slopes Westward

One main double-track line (between Seoul and Pusan) and extensive single-track lines, mostly of standard gauge, give South Korea an adequate railroad system. But highways are generally poor—a handicap for mechanized military equipment. Bridges are often washed out.

At some time in the ancient past, nature's forces tilted the southward-pointing peninsula down on the west and up on the east. As a result of this tilt, Korea, although it averages 150 miles in width, has its drainage divide only about 15 miles inland from the east shore.

Hence the west coast has a partly submerged shore line marked by countless fjordlike bays and islands. Yellow Sea tides, fluctuating 25 feet and more, have created broad tidal mud flats. On such flat, low ground the Inchon landings were made.

The east coast has almost no islands. Its shore line is straight and steep. Mountains slope into the sea or form narrow sand beaches. While

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MAYNARD OWEN WILLIAMS

A TERMINUS OF THE PAN AMERICAN HIGHWAY (Bulletin No. 5), BUENOS AIRES LEADS IN SIZE ALL CITIES SOUTH OF THE EQUATOR

Motorists reaching this point in the Argentine capital might not be able to drive on Florida Street, the narrow thoroughfare toward which most of these people are walking. It is closed to vehicles during the evening rush. The white sculptured group is a memorial to Don Roque Sáenz Peña, president of Argentina from 1910 to 1914.

Kansas City Celebrates 100th Birthday

FOR old timers who still "remember when," the 100th birthday of Kansas City brings a chance to recall the lusty, youthful days of typical American growth.

For Kansas City, long the jumping-off point in America's westward migration, this was the centennial summer. With pageants, parades, and other events, the city adjoining Kansas at the big bend of the muddy Missouri River took a backward look at its frontier origins.

Bread upon Waters Brought Gold

A little-recalled episode of history resulted in an early boost for the community. John C. McCoy, fur trader who built a store on the site of Kansas City in 1833, had a penniless acquaintance named John A. Sutter. McCoy paid Sutter's debts and induced other merchants to outfit the traveler for a journey west.

The result was a classic example of the return for casting one's bread upon the waters. Gold was discovered in 1848 at a mill which Sutter built in California, and hordes of gold-rushers who headed west funneled through Kansas City, enriching the local merchants.

This good fortune was compensation for an earlier geographical error which hurt the town. In 1819, Stephen H. Long, United States Army, rode a steamboat to the mouth of the Kansas River where it joins the Missouri near Kansas City. Long reported to his superiors that the land to the west was "almost wholly unfit for cultivation." Map makers for the next forty years labeled the area the "Great American Desert," thus discouraging would-be settlers.

By 1850, however, the "Gateway to the West" had prospered enough to be incorporated as "Town of Kansas." Proud civic boosters apparently thought the name was too modest; so three years later they reincorporated the community as "City of Kansas."

Served by Twelve Major Railroads

On September 20, 1865, a wood-burning locomotive pulled a string of stubby wooden coaches out of Kansas City over the tracks of the pioneer Pacific Railroad of Missouri, forerunner of the present Missouri Pacific Lines. Its departure marked the beginning of actual railroad operations in Kansas City. Now twelve major trunkline railroads help make Kansas City the principal distribution center for fourteen states. These railroads represent 37 per cent of the nation's total rail mileage. In place of that one small train of 1865, the Missouri Pacific alone now sends scores of passenger and freight trains daily in and out of Kansas City (illustration, next page).

For some years after the Civil War, the then trigger-happy town of Abilene, Kansas, obtained most of the Texas cattle trade, but in 1871 Kansas City formed a local stockyards company. The business flourished, and today Kansas City is the nation's second largest market in general livestock and its first in stocker and feeder cattle.

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rivers flowing west to the Yellow Sea meander through several chains of mountains, the Naktong is the only sizeable stream flowing to the east.

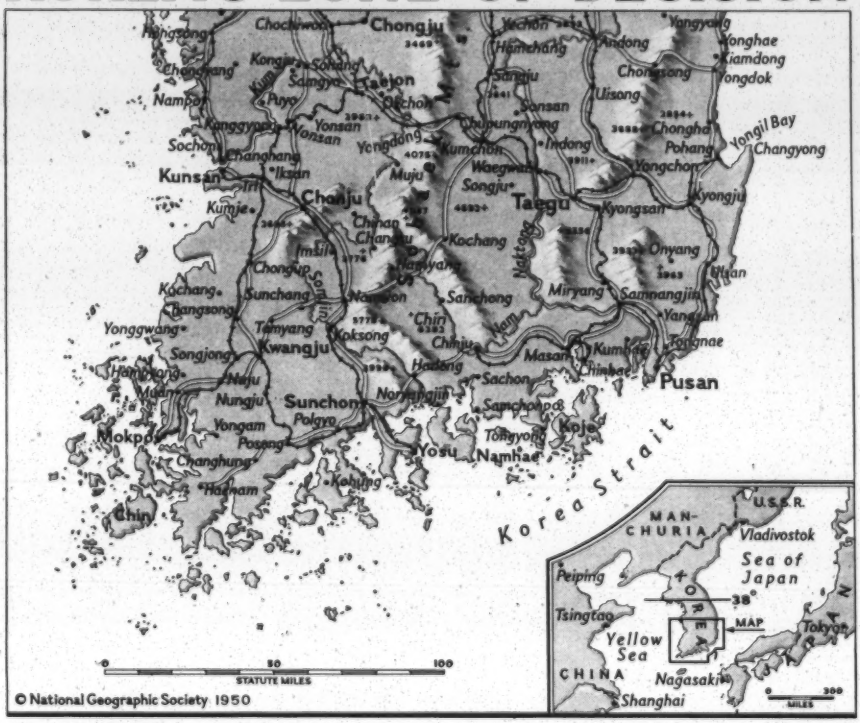
South Korea is the agricultural part of the peninsula. Rice is grown on every flat space where irrigation is possible. Thatched farmhouses and green terraces snuggle in every narrow valley between the endless lines of hills. Soybeans, hemp, wheat, barley, and vegetables grow in dry fields.

South Korea now counts 20,000,000 inhabitants, three-fourths of them on farms. Despite the mountains that rule out cultivation of most of the area, that is more than twice the population of North Korea, and five times that of Indiana, comparatively a farming paradise. A high birth rate and an influx of refugees and repatriates have brought South Korea 5,000,000 extra mouths to feed since the start of World War II.

NOTE: Korea appears on the National Geographic Society's map of Japan and Korea. Write the Society's headquarters, Washington 6, D. C., for a price list of maps.

For additional information, see "Roaming Korea South of the Iron Curtain," in the *National Geographic Magazine* for June, 1950; "Operation Eclipse: 1948," March, 1949; "With the U. S. Army in Korea," June, 1947; "Jap Rule in the Hermit Kingdom," October, 1945*; and "Chosen—Land of Morning Calm," October, 1933. *(Issues marked with an asterisk are included on a special list of Magazines available to teachers in packets of ten for $1.00; issues unmarked are available at 50¢ a copy.)*

KOREA'S ZONE OF DECISION



ON THE SOUTHERN TIP OF ASIA'S "SORE THUMB" PENINSULA, UN TROOPS STEMMED THE REDS

In this last-ditch territory, United States and South Korean forces fought a dogged delaying action throughout the long summer. Whatever future operations brought, history would doubtless label this up-and-down area the zone of decision of the Korean War.

Switzerland Makes the Most of Its Geography

IN SWITZERLAND, geography often has been the mother of invention. This is borne out by nearly every paragraph of William H. Nicholas's article, "Switzerland Guards the Roof of Europe," appearing in the August, 1950, issue of the *National Geographic Magazine.* By converting geographic liabilities into assets, the people have secured a high level of prosperity, traditionally democratic government, and a well-established neutrality.

A recent report that icy Alpine lakes are being used as giant "deep freezers" for storing food is but another example of the ingenuity with which the Swiss have made the most of a mountainous land only slightly larger than the combined areas of Vermont, Connecticut, and Rhode Island.

Railroads Mean Much to Mountainous Land

The Swiss Alps, for example, seemed to have little to offer, originally, beyond spectacular beauty. Covering two-thirds of the nation's land area, these mountains proved poor in minerals and rich in barren rocks. Covered with ice and snow, they served to isolate the inhabitants and posed a major problem in communication and transportation.

The invention of a practical steam locomotive in the early 19th century gave birth to the Swiss tourist industry and paved the way for a more complete integration of the country. Switzerland was among the first ten nations to establish railroads. Today the country claims one of the densest railway systems in the world, with over 3,600 miles of track reaching into every segment of the land.

With the railroads came thousands of tourists—sightseers and sportsmen—who found Swiss hospitality an art. By 1943, Switzerland had more than 7,000 hotels and an international reputation for the finest hotelkeeping. Among hotel men everywhere, Swiss training is considered the graduate school of the trade.

Switzerland has no oil resources and very little coal; but rushing mountain streams and waterfalls are plentiful. A harnessing of these waterways with the construction of some 6,000 power stations in the 20th century gave the country an abundance of cheap hydroelectric power. Electricity now runs 98 per cent of its railroads. It also supplies industrial plants which absorb almost half the nation's workers, and lights nearly every Swiss home, no matter how remote.

Midlands Hold Big Cities and Rich Farms

In an effort to feed 4,300,000 people, Switzerland added more than 1,000 square miles to its sparse farming lands during World War II, although two-fifths of the people still depend on imported foods.

The most prosperous farms and many of the largest cities lie on the fertile midlands between the Jura Mountains, which serve as a boundary between France and Switzerland, and the Alps. From this lake-dotted plain come condensed milk, milk chocolate, fruits, and the famous Swiss cheeses. Meat production is sufficient to cover the country's needs—about

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While once the city dealt in buffalo robes and Mexican silver ore received via the long and dusty Sante Fe Trail, it now has nationally important industries producing flour, cereals, dairy products, leather goods, and chemicals.

Shrewd and farseeing John McCoy would be delighted at the great growth of his city. The 1940 census gave the city proper a population of 399,178, but the preliminary 1950 census estimate is 453,290. This figure does not include Kansas City, Kansas, or the surrounding Missouri and Kansas suburbs. One of the neighboring communities is Independence, Missouri, home of President Harry S. Truman.

NOTE: Kansas City may be located on the Society's maps of the United States and the North Central United States.

For additional material on the region, see "Skyway Below the Clouds," in the *National Geographic Magazine* for July, 1949; "The West Through Boston Eyes," June, 1949; "Mapping the Nation's Breadbasket," June, 1948; "'Pyramids' of the New World," January, 1948; "These Missourians," March, 1946*; "Taming the Outlaw Missouri River," November, 1945*; "Land of a Million Smiles," May, 1943*; and "Trailing History down the Big Muddy," July, 1928.

ROBERT F. SISSON

GRAIN CARS AWAIT UNLOADING AT ONE OF KANSAS CITY'S GIANT ELEVATORS

Long freights of the Missouri Pacific Lines pull in and out of this company elevator yard during the busy wheat-harvesting season. After the cars are unloaded, the wheat is elevated to the top of the central portion of this structure by a lofting belt. There it falls into hoppers where it is weighed and cleaned. Then golden streams are shunted into the huge cylindrical storage bins at either side. Floor valves at the funnel-shaped bottoms of these bins release the wheat when it is to be shipped on to flour mills.

War Dogs Called to Active Service

UNITED STATES war dogs are headed back into action. The report that K-9 (canine) warriors are on duty in Okinawa, Germany, and Alaska is a reminder that fighting dogs, like ground troops, have not been replaced by "push-button" warfare.

From prehistoric times, the dog's acute sense of smell and hearing, his watchfulness, speed, and above all his devotion to man, have made this animal a valuable military ally.

More than 30 Breeds Have Joined the Army

By World War I, practically all the warring nations except the United States were training many thousands of dogs to be sentinels, messengers, rescuers, and to carry out other military chores. During World War II, Uncle Sam started his first war-dog program. This trained more than 10,000 American "Wags" for military service. Many of these K-9 soldiers performed heroic deeds all over the world from the snowy fields of the Far North to the tropic jungles of Pacific islands.

Altogether, American owners offered about 18,000 dogs for military duty. Among the thousands found suitable for service were some thirty-odd breeds, including Doberman pinschers (illustration, next page), Airedales, boxers, German shepherds, giant schnauzers, and such sturdy pack dogs as Alaskan Malamutes and Siberian huskies.

The selection, training, and distribution of these soldier dogs were in charge of the Quartermaster Corps. The volunteer civilian organization, "Dogs for Defense, Inc.," helped recruit. Special centers were set up to develop expert dog handlers taken from Army, Marine, and Coast Guard ranks. This was as necessary to the project as were the dogs themselves, since man and beast were trained to work as teams.

Dogs Must Be Aggressive but Obedient

Incoming four-footed soldiers had to pass stiff physical examination before being accepted. Later they were given careful tests to find out what types of services each could best perform.

Many widely differing qualities were required. For instance, attack dogs, trained to hold prowlers and fugitives, needed to be aggressive, yet obedient to orders. Perseverance (appropriately termed "dogged") was an important characteristic for such work as carrying secret codes, new orders, or appeals for more ammunition; for establishing advance communication lines; and especially for the humane task of locating and reporting on the wounded.

In general, intelligence, willingness, and reliability under gunfire were the traits looked for in picking the war dog "most likely to succeed." Endurance and a keen sense of smell and of hearing are, of course, basic requirements. It has been suggested that such trained assistants might be particularly useful in the often Indianlike struggle going on in Korea. They might be able to check the communists' guerrilla infiltration of United Nations' lines.

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162,400 tons a year—while enough milk is produced to permit export. About one-fourth of the Swiss are farmers.

Well known among Switzerland's many manufactured articles are its watches (illustration, below). A growing heavy industry produces some of the world's best generators, Diesel engines, and railway cars.

Politically, Switzerland's geography has been helpful. Located in the heart of Europe, sharing boundaries with France, Germany, Italy, and Austria, the mountain nation might be called the crossroads of the continent. Fortunately, its neutrality often has been the common desire of powerful neighbors since 1815. In recent conflicts Europe has found Switzerland a convenient non-partisan meeting ground.

Nevertheless, the small country finds reassuring her encircling, protective mountains when wars and rumors of wars swirl around her. The entire nation was mobilized and alert throughout World War II. Hitler refrained from attacking Switzerland because he was advised that it would cost him 500,000 casualties.

NOTE: Switzerland is shown on the Society's map of Europe and the Near East.

For additional information, see "Switzerland Guards the Roof of Europe," in the *National Geographic Magazine* for August, 1950; "Swiss Cherish Their Ancient Liberties," April, 1941*; "Lake Geneva: Cradle of Conferences," December, 1937; and "August First in Gruyères," August, 1936.

See also, in the GEOGRAPHIC SCHOOL BULLETINS, November 7, 1949, "Swiss Study Atom on Icy Alpine Ridge"; and "Lake Geneva Waters Sink to Near-Record Low," May 2, 1949.

WILLARD R. CULVER

PRACTICED EYES AND PATIENT HANDS PRODUCE ANOTHER PERFECT SWISS WATCH

This old timer works for Patek, Philippe in Geneva, Switzerland. He assembles each model, then takes it apart again three times before it is oiled. Another part of this factory and many of the other watch houses use modified assembly-line technique. The watch industry employs about 50,000 Swiss. Most of them do piece work in their own homes.

Bulletin No. 5, October 2, 1950

Pan American Highway Makes Progress

PICTURE a Pan American Highway—one continuous ribbon of hard-surfaced road to stretch more than 15,000 miles from Alaska to the Straits of Magellan.

Mexico has given this vision a big boost. The neighbor republic's current road-building progress recently was dramatized effectively by a government-sponsored automobile race from border to border, showing fast time to be possible over the 2,170 miles of Mexico's newly completed Pan American Christopher Columbus Highway.

New Route to Mexico City

Overall, the Western Hemisphere route is known as the Pan American Highway System. Its Middle American reach is often called the Inter-American Highway. Perhaps a dozen sectional names could be compiled, like Christopher Columbus Highway in Mexico, Simon Bolívar Highway in Venezuela, Franklin D. Roosevelt Highway for the Guatemala section and again for the coastal route in Peru and northern Chile.

Running south from the United States border at El Paso, Texas, Mexico's Christopher Columbus route passes through Chihuahua, Durango, and Zacatecas. At Mexico City it meets the older and shorter Pan American route running south from Laredo—familiar to many motorists from the States. The joint highway continues southeast 857 mountainous miles through Puebla and Oaxaca to a dead end at the Guatemala border.

For the next 30 miles into Guatemala, no auto road exists. For another 70 miles or so, the road is poor and likely to be impassable in the May-to-October rainy season. For the rest of its 330-mile southern length, however, and for its 530 miles through El Salvador (illustration, next page), southern Honduras, and Nicaragua, it is nearly all paved or hard gravel surface.

In Costa Rica, the highway is paved or gravel-surfaced for a few score miles each side of the capital, San José. It is dirt road for about 90 miles at the Nicaragua end, and unsurveyed trail, impassable for automobiles, for 90 miles at the Panama end.

New South America Map Shows Route

Panama continues the Costa Rica gap in the motor road for 28 trail miles from the border to Volcán, then provides good road for 340 miles east to the city of Panamá. East of the Panama Canal, however, lies the unsurveyed wilderness of Darien, one of the world's least known areas. A road link here is perhaps years in the future, and tourists to South America must ship their cars to Colombia or Venezuela ports.

In South America alone, some 13,000 miles of main road and branches are identified with the Pan American Highway System. Starting from the Caribbean port of La Guaira, the route is generally good through Venezuela and Colombia. After a gap in southern Ecuador, by-passable by ferry, it is good through Peru and northern Chile, crossing the Andes into Argentina by 12,800-foot Uspallata Pass, site of the Christ of the Andes.

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At the outbreak of the fighting in Korea, only one platoon of war dogs was on active duty with the United States Army. This unit was stationed at Fort Riley, Kansas. Most K-9 warriors of World War II long since had been returned to civilian life. All the four-footed veterans were carefully de-trained before they were demobilized so that they would behave properly in peacetime.

By the time dogs were returned to their prewar masters, many of them had won their traditional title—"man's best friend." They proved it by their citations for valor under fire; for carrying messages while hurt; for leading safely back to base a party surrounded by the enemy; for scaling walls and squeezing past barbed-wire entanglements to seek out wounded soldiers.

NOTE: For further information about war dogs and their services to the nation, see "Animals Were Allies, Too," in the *National Geographic Magazine* for January, 1946*; "Your Dog Joins Up," January, 1943*; "Dogs of Duty and Devotion," December, 1941; and "Man's Oldest Ally, the Dog," February, 1936.

See also, in the GEOGRAPHIC SCHOOL BULLETINS, March 6, 1950, "Mastiffs Become Scarce Amid Canine Plenty."

J. BAYLOR ROBERTS

A MEMBER OF THE K-9 CORPS PROTECTS HIS MASTER FROM AN INTRUDER

This Doberman pinscher bares sharp teeth in an ominous snarl at a stranger. Dobermans, sleek of coat and compact of frame, are excellent guards, and likely to be one-man dogs. At this Army training camp for dogs at Front Royal, on the slopes of Virginia's Blue Ridge, canine rookies were coached during World War II. Their "studies" included guard duty, training, carrying telephone wire to front lines, and transporting such necessities as ammunition, food, pigeon cases, and medical supplies. As a message carrier, the dog can easily outrun the two-legged soldier and, being smaller and lower, is not as likely to be hit.

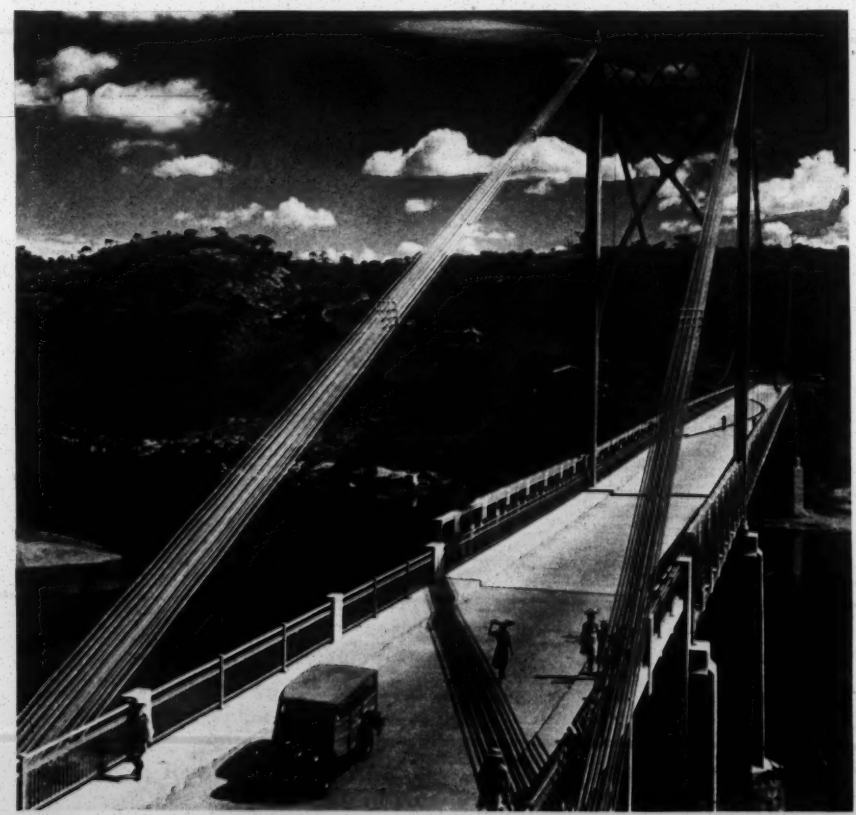
TEACHERS! Do you leaf aimlessly through your *National Geographic Magazines*, looking for that article on Greece, those color pictures of Guatemalan costumes? Save time. Order the Cumulative Index, 1899-1949 inclusive. $2.50.

An east fork runs from near Arequipa, Peru, through Bolivia and central Argentina to meet the west route at Buenos Aires (illustration, inside cover). Spurs of the system reach north to Rio de Janeiro, Brazil, and to Asunción, Paraguay. Good roads stretch over most of Argentina.

The Pan American Highway System is shown by a heavy red line on the National Geographic Society's map of South America. Issued as a supplement to the October, 1950, issue of the National Geographic Magazine, this 10-color map is the latest in the Society's continuing series of maps covering the world's vital areas.

NOTE: The Society's map of South America shows the route of the Pan American Highway through Panama and South America; the route through Mexico and Central America is shown on the map of Countries of the Caribbean.

For further information on countries traversed by the highway, see "Peru, Homeland of the Warlike Inca," in the *National Geographic Magazine* for October, 1950; "Exploring Ancient Panama by Helicopter," February, 1950; "Keeping House for a Biologist in Colombia," August, 1948; "Guatemala Revisited," October, 1947; "Down Mexico's Rio Balsas," August, 1946*; "Quinine Hunters in Ecuador," March, 1946*; Coffee Is King in El Salvador," November, 1944*; "Chile's Land of Fire and Water," July, 1941; and "Buenos Aires: Queen of the River of Silver," November, 1939*.



LUIS MARDEN

CUSCATLÁN BRIDGE CARRIES THE PAN AMERICAN HIGHWAY OVER EL SALVADOR'S LEMPA RIVER

Station wagon and women bearing baskets on their heads represent old and new transport. Weird "four-eyed" fish (Anableps dowei) are caught in this largest of the Central American country's rivers.